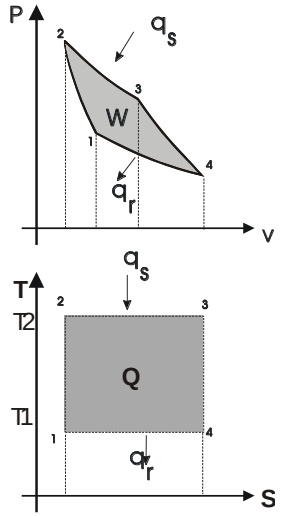
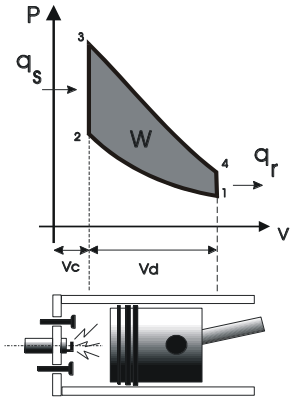
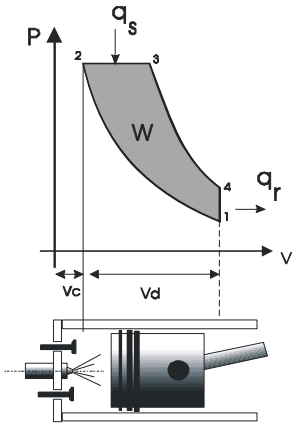
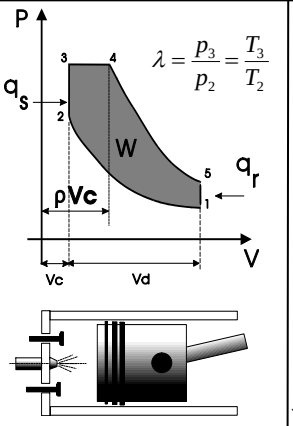
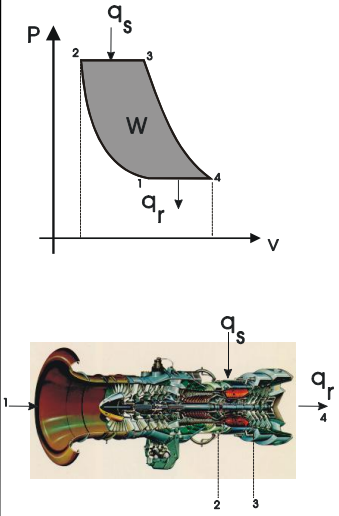
	Carnot	Otto	Diesel	Mixto	Joule
Ciclo		 $v_d = v_1 - v_2 = v_1(\varepsilon - 1)$ $\varepsilon = \frac{v_1}{v_2}; \_ \lambda = \frac{p_3}{p_2}$	 $v_d = v_1 - v_2 = v_1(\varepsilon - 1)$ $\varepsilon = \frac{v_1}{v_2}; \_ \rho = \frac{v_3}{v_2} = \frac{T_3}{T_2}$	 $\lambda = \frac{p_3}{p_2} = \frac{T_3}{T_2}$ $v_d = v_1 - v_2 = v_1(\varepsilon - 1)$ $\varepsilon = \frac{v_1}{v_2}; \_ \rho = \frac{v_4}{v_3} = \frac{T_4}{T_3}; \_ \lambda = \frac{p_3}{p_2}$	
Calor	$T_2 = T_3 \_; (s_1 = s_2)$ $T_1 = T_4 \_; (s_4 = s_3)$ $q_s = T_2(s_3 - s_2)$ $q_r = T_1(s_4 - s_1)$	$q_s = u_3 - u_2 = C_v(T_3 - T_2)$ $q_s = c_v T_1 \varepsilon^{k-1}(\lambda - 1)$ $q_r = u_4 - u_1 = c_v(T_4 - T_1)$ $q_r = c_v T_1(\lambda - 1)$	$q_s = h_3 - h_2 = C_p(T_3 - T_2)$ $q_s = c_p T_1 \varepsilon^{k-1}(\rho - 1)$ $q_r = u_4 - u_1 = C_v(T_4 - T_1)$ $q_r = c_v T_1(\rho^k - 1)$	$q_s = c_v(t_3 - t_2) + c_p(t_4 - t_3)$ $q_s = c_v T_2[\lambda - 1 + k\lambda(\rho - 1)]$ $q_r = u_4 - u_1 = C_v(T_4 - T_1)$ $q_r = c_v T_1(\rho^k - 1)$	$q_s = h_3 - h_2 = c_p(T_3 - T_2)$ $q_r = h_4 - h_1 = c_p(T_4 - T_1)$ $\pi = \frac{p_2}{p_1}$
Procesos Termodinámicos	$T_2 = T_1\left(\frac{p_2}{p_1}\right)^{\frac{k-1}{k}} \_; \frac{v_4}{v_3} = \left(\frac{T_2}{T_1}\right)^{\frac{1}{k-1}}$ $T_3 = T_4\left(\frac{p_3}{p_4}\right)^{\frac{k-1}{k}} \_; \frac{v_1}{v_2} = \left(\frac{T_2}{T_1}\right)^{\frac{1}{k-1}}$	$T_2 = T_1\left(\frac{v_1}{v_2}\right)^{k-1} = T_1\varepsilon^{k-1}$ $T_3 = T_2\left(\frac{p_3}{p_2}\right) = T_2\lambda = T_1\lambda\varepsilon^{k-1}$ $T_4 = T_3\left(\frac{v_3}{v_4}\right)^{k-1} = \frac{T_3}{\varepsilon^{k-1}} = T_1\lambda$	$T_2 = T_1\left(\frac{v_1}{v_2}\right)^{k-1} = T_1\varepsilon^{k-1}$ $T_3 = T_2\left(\frac{v_3}{v_2}\right) = T_2\rho = T_1\rho\varepsilon^{k-1}$ $T_4 = T_3\left(\frac{\rho}{\varepsilon}\right)^{k-1} = T_1\rho^k$	$T_2 = T_1\left(\frac{v_1}{v_2}\right)^{k-1} = T_1\varepsilon^{k-1}$ $T_3 = T_2\left(\frac{p_3}{p_2}\right) = T_2\lambda = T_1\lambda\varepsilon^{k-1}$ $T_4 = T_3\frac{v_4}{v_3} = T_1\varepsilon^{k-1}\lambda\rho$ $T_5 = T_4\left(\frac{v_4}{v_5}\right)^{k-1} = \left(\frac{\rho v_2}{v_1}\right)^{k-1} = T_1\rho^k\lambda$	$T_2 = T_1\left(\frac{p_2}{p_1}\right)^{\frac{k-1}{k}} = T_1\pi^{\frac{k-1}{k}}$ $T_3 = T_4\left(\frac{p_3}{p_4}\right)^{\frac{k-1}{k}} = T_4\left(\frac{p_2}{p_1}\right)^{\frac{k-1}{k}} = T_4\pi^{\frac{k-1}{k}}$ $\frac{T_3}{T_4} = \frac{T_2}{T_1}$
Trabajo	$w = q_s - q_r$ $w = RT_2 \ln\frac{v_3}{v_2} - RT_1 \ln\frac{v_4}{v_1}$	$w = q_s - q_r$ $w = \frac{RT_1}{k-1}(\lambda - 1)\varepsilon^{k-1}(1 - \frac{1}{\varepsilon^{k-1}})$	$w = q_s - q_r$	$w = q_s - q_r$	$w_T = h_3 - h_4 = c_p(T_3 - T_4)$ $w_C = h_2 - h_1 = c_p(T_2 - T_1)$ $w_N = w_T - w_C = (h_3 - h_4) - (h_2 - h_1)$
Presión media	$p_m = \frac{w}{v_3 - v_1}$	$p_m = \frac{w}{v_1 - v_2} = \frac{p_1(\lambda - 1)\varepsilon^{k-1}}{(k-1)(\varepsilon - 1)}\eta$	$p_m = \frac{w}{v_1 - v_2} = \frac{p_1(\lambda - 1)\varepsilon^k k}{(k-1)(\varepsilon - 1)}\eta$	$p_m = \frac{p_1\varepsilon^k[\lambda - 1 + k\lambda(\rho - 1)]}{(k-1)(\varepsilon - 1)}\eta$	
Eficiencia	$\eta = 1 - \frac{q_r}{q_s}$ $\eta = 1 - \frac{T_1}{T_2}$	$\eta = 1 - \frac{q_r}{q_s}$ $\eta = 1 - \frac{1}{\varepsilon^{k-1}}$	$\eta = 1 - \frac{q_r}{q_s}$ $\eta = 1 - \frac{1}{\varepsilon^{k-1}}\frac{\rho^k - 1}{k(\rho - 1)}$	$\eta = 1 - \frac{q_r}{q_s}$ $\eta = 1 - \frac{1}{\varepsilon^{k-1}}\frac{\lambda\rho^k - 1}{[\lambda - 1 + k\lambda(\rho - 1)]}$	$\eta = 1 - \frac{q_r}{q_s} = \frac{T_1}{T_2}\frac{\frac{T_4}{T_1} - 1}{\frac{T_3}{T_2} - 1}$ $\eta = 1 - \frac{1}{\pi^{k-1}}$

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